Course Description

Module*	**Language***
Mathematics I – 0107	English
Academic Year	**Semester:**
2024-2025	Fall
ECTS:	**Prerequisite:**
5	-

Course Outcome

1. **At the end of the semester, students would be able to understand how engineers solve problems step by step and properly.**
2. **Be aware of the weak points and the errors they expect during the mathematical solutions before starting their program.**
3. **Be familiar with the major rules, geometries, equations, functions, graphs, and arranging, classifying, and performing mathematical operations on data using Matrices.**
4. **How to differentiate a function of one or more variables using, for example, the chain rule, the product rule, and the change of variables;**
5. **Understand the role of mathematics and how the development of technology has been related to the development of mathematics.**

Course Content: *

Coordinate Axis, Domain & Range, Limits and Continuity, Equation of Functions, Graphing, Inverse Functions and Their Graphs, Matrix and Determinate, Solution of Simultaneous Equations by Matrix, Applications on Matrices in Real Life, Derivatives, and Second Derivatives, Derivatives of Parametric Functions, Derivative of Trigonometric Functions, Derivative of Inverse Trigonometric Functions, Transcendental Functions and Their Derivatives, The Derivatives of Functions like u^v , and Logarithmic Functions, Applications on Derivatives: Rates of Changes, Critical Points, Minimum and Maximum Values, Finding Absolute Extrema, Linear Approximations, and Business Applications….

References: *

1- Thomas Calculus 11th edition 2005
2- Thomas Calculus by "George Thomas" 12th edition 2010
3- Schism's outlines Matrix Operations 2nd edition 1989
4- Discrete mathematics "P.K. Mittal" 1st edition 2004

Type of Teaching: *

3 hours /Theoretical
An hours /Tutorial

Requirements For Credit Points: *

Modules Course Requirements:

1. Students' Attendance in class is important.
2. Discussion in class is required
3. Midterm exam or Worksheet exam

4. Solving problems on the whiteboard in class 5. Report 6. Quiz and Pop-quiz
Grade Distribution: *
The Grade Requirements %40 Student Efforts 60% Final Exam

Weekly Plan

Module*	
Mathematics I – 0107	
Academic Year	**Semester:**
2024-2025	Fall
ECTS:	**Prerequisite:**
5	-
Detail	

Week	Detail
1	Coordinate Axis, Domain & Range, Limits, and Continuity
2	Equation of Functions, Graphing, Inverse Functions and Their Graphs
3	Matrix and Determinate
4	Solution of Simultaneous Equations by Matrix
5	Applications on Matrices in Real Life
6	Derivatives, and Second Derivatives
7	Derivatives of Parametric Functions, Derivative of Trigonometric Functions
8	Derivative of Inverse Trigonometric Functions
9	**Mid-Term Exam**
10	Transcendental Functions and Their Derivatives
11	The Derivatives of Functions like u^v , and Logarithmic Functions
12	Applications on Derivatives: Rates of Changes, Critical Points
13	Minimum and Maximum Values, Finding Absolute Extrema
14	Linear Approximations and Business Applications….

Workload

Module*	
Mathematics I	
Academic Year	**Semester:**
2024-2025	Fall
ECTS:	**Total number of credit hours**
5	5*27 = **135**
Prerequisite:	
-	
Detail	

Type	**Number**	**Time Factor**	**Total**
Attendance	14	4hr	14 *4 = 56
Report	1	4hr	1*4 = 4
Mid Term Exam	1	3hr	1*3 = 3
Worksheet	2	8hr	2*8=16
Seminar	2	4hr	2*4 = 8
Classwork (Tutorial)	8	4hr	8*4 = 32
Discussion	4	2hr	4*2 = 8
Quiz	4	2hr	4*2 = 8
			135 hr.